

# Extension to the known range of Gould's Long-eared bat *Nyctophilus gouldi* Tomes, 1858 (Chiroptera: Vespertilionidae) in New South Wales

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During March 1989 bat trapping was carried out at the Macquarie Marshes Nature Reserve (30°45'S, 147°32'E). The area trapped was in river red gum *Eucalyptus camaldulensis* woodland adjacent to open water in both a man-made channel and the marshes proper. Amongst the Lesser Long-eared bats *Nyctophilus geoffroyi* captured were individuals of another *Nyctophilus* species that was clearly different by facial characters (Figs 1 and 2) but had similar forearm lengths. These bats did not fit the descriptions of Hall and Richards (1979), nor Richards (1973), for any species, but showed similarities to Gould's Long-eared Bat *N. gouldi* apart from their small size (Table 1). Churchill *et al.* (1984) had the same problem with bats collected in central Queensland since they were considerably smaller and 750 km from the nearest known *N. gouldi* population.

Hall and Richards (1979) described *Nyctophilus gouldi* as ranging along the Great Dividing Range and adjacent coastal country. Their distribution map indicated that they expected it to extend onto the New South Wales north-western slopes. However, all records in the northern half of New South Wales and south-eastern Queensland were coastal, with a single site in inland Queensland.

Richards (1983) showed basically the same distribution map for the species. He stated that *N. gouldi* is replaced on the inland side of its distribution by *N. timoriensis* with a narrow band of overlap between the two. This overlap area approximates the 149°E line of longitude in northern New South Wales and then swings west through the Riverina.

The distribution and taxonomy of *N. gouldi* has been investigated by Parnaby (1987). He extended the known range north to the Atherton region of Queensland and further material indicated that it did inhabit some areas of semi-arid woodland in Queensland. Parnaby also located specimens from the large area of northern New South Wales which is represented on the map in Hall and Richards (1979) as being suitable but from which no collections had been recorded by them. None of this material was from west of the 149°E line of longitude.

Parnaby subsequently identified the specimens from the Marshes reported here as being a small form of *N. gouldi*, extending the species' known range 180 km

inland from the Pilliga Scrub site in Parnaby (1987) (Fig. 3). This places *N. gouldi* well inside the range of *N. timoriensis* predicted by Hall and Richards (1979). The suggestion that *N. timoriensis* replaces the closely related *N. gouldi* in central New South Wales (Richards 1983) may not be valid, but the range of *N. timoriensis* is too poorly known to draw a conclusion.

In the coastal forests *N. gouldi* is dependent for roosting on large trees with hollows (Lunney *et al.* 1988). If this dependence applies throughout its range then its association with river redgums and floodplain woodlands is to be expected. Given its occurrence on the Macquarie River the species may exist along many of the rivers and their associated woodlands in this area, such as the Bogan and Castlereagh Rivers.

Table 1. Size of *Nyctophilus gouldi* from the Macquarie Marshes Nature Reserve.

Australian Museum Registration Number	Sex	Forearm (mm)	Weight (g)
M20369	Male	36.8	6.5
M20370	Female	39.6	7.5
M20382	Male	35.2	6.5

The specimens from the Macquarie Marshes are amongst the smallest *N. gouldi* yet described. While they fall within the known size range for the inland Queensland specimens, both males from the marshes are below the average size of the males from Capella, central Queensland. The small size of the inland form of *N. gouldi* could easily lead to it being misidentified as *N. geoffroyi*, especially using the size characteristics in Hall and Richards (1979). The smaller male was only 0.6 mm longer in its forearm measurement than the largest local male *N. geoffroyi*, and was 3.8 mm smaller than the minimum size published by Hall and Richards (1979).

Any survey work further inland will have to take into account the possibility of even smaller *N. gouldi* occurring. A check of facial features, as well as forearm length, is essential if further populations of this bat are to be recognized.





Fig. 1. A facial view of a *Nyctophilus geoffroyi* from the Macquarie Marshes. The noseleaf of the species is larger than that of other *Nyctophilus* species. (Photo by P. German).





Fig. 2. A facial view of a *Nyctophilus goeldi* from the Macquarie Marshes. The low board noseleaf distinguish this from *N. geoffroyi*. (Photo by P. German).



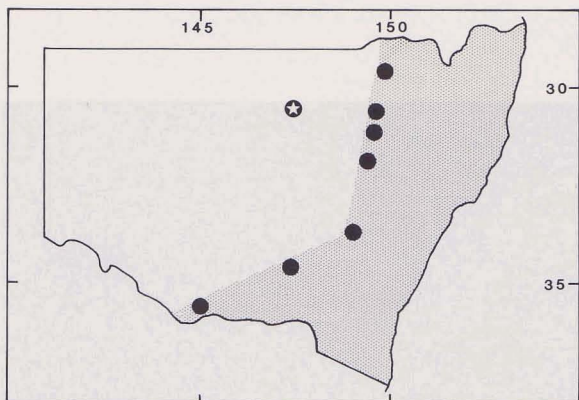


Fig. 3. The previously known distribution of Gould's Long-eared Bat, *Nyctophilus gouldi*. Hatching represents the area from which Parnaby (1987) recorded specimens, with his inland specimens marked by dots. The star shows the locality of the Macquarie Marshes population reported in this paper.

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at Coonabarabran for arranging the use of Sinclair's Hut in the Marshes for us and thank the RZS members and associates who remained cheerful throughout the week they were floodbound in said hut. We would also like to thank Harry Parnaby for taking the time to look at our specimens and confirming their identity.

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#### BOOK REVIEW

##### "A Guide to Bats of South Australia"

Terence B. Reardon and Stanley C. Flavel, 1987

Published by the South Australian Museum in association with the Field Naturalists' Club of South Australia (Inc.)

Recommended retail price: \$10.95.

This is how a field guide should be written. The authors have done a superb job of making a bat-catchers life an easy one. This small book is packed with valuable information to help with the identification of this difficult group. Even the most experienced field worker will find many useful tips.

The keys to identification are presented as a series of clear and well labelled drawings. Once the species has been identified page reference numbers lead straight to either the species text or photograph. The photographs are in colour and show the major distinguishing features of each species.

The species accounts are divided into four sections. 1) a detailed description of the bats' appearance, what species it may be confused with and tips on what to look out for. Diagnostic measurements such as forearm and weight ranges are included at the end of this section. 2) Distribution and status gives a detailed description of the bats' range in South Australia and a comment on its status within the state and in Australia

generally. This is backed up by a large clear map of South Australia showing specimen localities and expected range. It also provides a small map showing the species range throughout Australia. 3) Habitat and Habits provides a summary of breeding biology, behaviour, favoured habitat, roost preferences and diet. 4) Notes includes anything else that may be known, including tips on catching, how badly it bites, suitability for captivity and prior species names (an essential item due to the taxonomic turmoil within this group over the last few years).

As well as a specific field guide to the bats of South Australia this book covers topics useful to naturalists anywhere. The introductory chapters cover many aspects of bat biology that are written in clear and easy language (the inevitable big words are covered in the glossary at the back). These introductory chapters answer questions regarding where bats live, eat, breed, how they fly and how they find their way around in the dark. Each of these sections are introduced with delightful, though somewhat batty, cartoons. Other chapters deal with the technical details of how to catch bats and what to do with them once you've got them. This is well backed up by the use of photographs and diagrams.

Well I can only say that for anyone interested in Australian bats, this book will be a great help. I am impressed with what the authors have achieved with this guide as many of the species are only recently described and very difficult to identify. If I have any criticism of this book it is to say that I am sad that it is limited to South Australia.

SUE CHURCHILL

Conservation Commission of the Northern Territory.